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MOURNING DOVE STATUS REPORT

1964



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
Special Scientific Report--Wildlife No. 87

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MOURNING DOVE STATUS REPORT, 1964

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CONTENTS

Abstract	iii
Introduction	1
Procedure	2
The call-count method	2
Weighting factors	4
Randomization of dove-call routes	4
Long term trends	5
Trends in the Breeding Population Index - 1964	6
Eastern Management Unit	6
Central Management Unit	6
Western Management Unit	6
Discussion of population index trends	9
Literature Cited	10

ABSTRACT

An index to the 1964 mourning dove breeding population was obtained by a call-count survey conducted throughout the United States. Trends in the breeding population index were calculated for three management units and for hunting and nonhunting States within the management units. Trends in the breeding population indexes from 1963 to 1964 were as follows: Eastern Unit up 7.4 percent, Central Unit up 3.6 percent, and Western Unit up 18.7 percent. For the United States as a whole, the 1964 breeding population was up 7.9 percent from 1963.

Summaries of call-count surveys conducted in Canada during 1963 and 1964 are included. The average number of doves heard on comparable routes in Ontario (the only Province submitting comparable data) declined 3.9 percent from the 1963 level.

INTRODUCTION

An annual survey of the breeding population of mourning doves by a system of call-count routes provides an index to the status of the dove population in the United States. Through the cooperation of State, Federal, and independent observers, call-count routes were widely established by 1953. The hundreds of cooperators who participate in the call-count survey have contributed to data that form the basis for this report.

Prior to 1960, the annual status of the mourning dove population was reported in the Mourning Dove Newsletter. The Newsletter has been discontinued, but the annual status of the population has been published annually in the Special Scientific Report--Wildlife Series since 1960. The 1960 through 1963 reports are numbered 49, 57, 70, and 73, respectively.

In 1961, dove-call routes were set up and run on a trial basis in several Canadian Provinces. Results of these trial routes emphasized the desirability of establishing and maintaining a dove-call census in Canada.

The Canadian dove-call census was conducted again in 1963 and 1964, and the results of the censuses for those years are set forth in table 5.

It is expected that with the establishment of additional routes, the compilation of sufficient comparable data, and the incorporation of suitable weighting factors, the data provided by the Canadian cooperators will prove extremely valuable in future management of the mourning dove.

The call-count survey is conducted each year during the period May 20-June 10. Intensive studies conducted in the Eastern United States (Special Scientific Report--Wildlife No. 17, 1952) indicate that dove calling activity is relatively stable during this period.

In order to provide for the required publication of hunting regulations, the Dove Regulations Committee must

meet no later than late June. Status statistics must be summarized for consideration by this Committee. The annual Status Report (or a preliminary version thereof) serves this purpose. The Status Report is also distributed to all cooperators and is available to interested organizations and individuals.

For several years prior to 1960, the Federal framework of mourning dove hunting regulations was established on the basis of eastern and western groups of States. Recent analysis of banding data indicates that there are three largely independent units of the mourning dove population (Kiel, 1959). Since 1960, the Federal framework of hunting regulations has been based on these three management units. The criteria for a management unit are that the bulk of the doves harvested within a unit is produced within that same unit and that a significant number of doves produced within a unit is not harvested outside that unit. The Eastern, Central, and Western Management Units, outlined in figure 1, best meet these criteria. In order to establish more firmly the management unit boundaries, additional analysis of banding data is currently in progress.

PROCEDURE

The call-count method

Call-count routes were established after field investigations in 1950-51 demonstrated the feasibility of the technique. These investigations were reported by Foote, Peters, McGowan, Kerley, Duvall, Robbins, and Wagner (1952). Each route is 20 miles long and has 20 listening stations located 1 mile apart. Call-counts begin one-half hour before sunrise and continue for 2 hours. A record is kept during the survey period of all doves seen or heard calling along the survey route. Information on the call-count method and procedures for randomly selecting call-count routes was presented by Foote, Peters, and Finkner (1958).

The only currently available dove population index, national and international in scope, is the call-count survey. The survey has limitations and possible biases which require further study. One important limitation is the fact that the survey provides an index to the breeding population and does not take

Figure 1. Mourning Dove Management Units

The map displays the United States with state boundaries and abbreviations. A thick black line runs from the Pacific Northwest, through the Great Basin, and down the West Coast, separating the Western and Central regions. Another thick black line runs from the Great Lakes, through the Ohio River, and down the Gulf Coast, separating the Central and Eastern regions. A legend in the bottom left corner shows a cross-hatched box labeled "Nonhunting States".

Western Region: Includes WASH., OREG., IDAHO, NEV., CALIF., UTAH, ARIZ., and N. MEX.

Central Region: Includes MONT., N. DAK., S. DAK., WYOM., NEBR., KANS., COLO., OKLA., ARK., MISS., ALA., GA., S. C., N. C., VA., W. VA., MD., PA., and N. J.

Eastern Region: Includes CT., R. I., and N. H.

— Nonhunting States

production into consideration. This limitation is especially noteworthy since a high percentage of an average fall population is composed of young-of-the-year.

As a basis for breeding population indexes, it has been found that doves heard calling have provided a less variable index than doves seen. Recent studies (Frankel and Baskett, 1961 and Jackson and Baskett, 1964) have shown that unmated males call at a greater rate than mated males. This suggests that the annual call-count census measures changes in the ratio of mated males to unmated males, rather than changes in breeding dove densities. However, Wight (in press) shows that changes in matedness, where the sex ratios of the adult segment of the population approach equality, will not significantly alter the capability of the dove call-count census to measure annual trends in the mourning dove breeding population. Continued research on this problem is being conducted at this time.

Weighting factors

When combining data from several States to obtain breeding population indexes for management units or parts of management units, it is necessary to give appropriate weight to the data from each State. This is done by multiplying the adjusted average number of doves heard calling per route in each State by the estimated area of dove habitat (in square miles) in the State to obtain a breeding population index value. These index values from each State are then added together to obtain the properly weighted breeding population index for the combination of States. This weighting procedure recognizes differences between States, both in dove density and in the amount of habitat. Dove habitat area was estimated and listed in the 1958 Mourning Dove Newsletter in table 1.

Randomization of dove-call routes

In order that the data on dove population density shall be representative of the breeding dove population of each State, random selection of dove census routes is desirable. The present management routes were, in some cases, selected in areas of high-density dove populations and do not yield representative measurements of the breeding dove populations throughout the entire State.

Randomly selected dove-call routes were first selected and run in the States of Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee during the 1959 dove census. In 1961, the States of Arizona, California, Florida, Maryland, and Virginia also established and ran randomly selected dove census routes.

The States of Idaho, South Dakota, Wisconsin, Missouri, Kansas, Nebraska, and Minnesota established and censused randomly selected routes during 1963. This year's data, therefore, provide the first comparison of random routes in successive years for those States.

In 1964, in addition to the regular management routes, random routes were selected and run in the States of Colorado, Illinois, Iowa, Louisiana, Nevada, Ohio, Oregon, Utah, and Washington. These routes will be run again in 1965 and the comparable data will be incorporated into the 1965 Mourning Dove Status Report.

Long-term trends

A base year was selected for the purpose of showing long-term trends in a State's breeding dove population index. Annual percentage changes have been applied to the base figure (average doves heard calling per route) to give an adjusted figure which shows the true relation of indexes from year to year. The selection of a base figure is necessary because not all routes are censused each year.

The average number of doves heard calling on routes censused in two successive years in each State has been adjusted according to percentage change from the previous year. This procedure may be illustrated with data from Alabama where 1957 was selected as a base year (table 3). In that year, the average number of doves heard calling per route was 21.1. In 1958, the percentage change from 1957 in counts on comparable routes was an increase of 12.8 percent, so the base figure of 21.1 was adjusted upward by 12.8 percent to a level of 23.8. In 1959, the percentage change from 1958 in counts on comparable routes was a decrease of 21.6 percent. The 1958 "average heard" figure of 23.8 was, therefore, decreased 21.6 percent to the 1959 level of 18.7 percent.

TRENDS IN THE BREEDING POPULATION INDEX - 1964

Eastern Management Unit

The breeding dove population index for the Eastern Unit increased 7.4 percent from its 1963 level (table 1). This indicates a reversal of the general decline observed in the 1961, 1962, and 1963 surveys (figure 2). The 1964 index is 3.1 percent below the peak 1960 index and 2.9 percent above the Unit's 10-year average index (1954-1963).

The hunting States of the Eastern Unit showed an 11.5 percent increase from the 1963 breeding population index. The nonhunting States showed a 4.0 percent decline from the 1963 population index level (figure 3).

Central Management Unit

The breeding dove population index for the Central Unit increased 3.6 percent from the 1963 level (table 1). The increase for this Unit also follows a general decline from the peak index reached in 1960 (figure 2).

In hunting States of the Central Unit, the index increased 4.0 percent from its 1963 level. The index in the nonhunting States of the Central Unit showed an increase of 3.0 percent above the 1963 levels. Trends in breeding-population indexes are depicted in figure 3.

The Central Unit's 1964 index is 18.7 percent below the peak index reached in 1960 and is 2.2 percent below the 10-year average index (1954-1963).

Western Management Unit

The index for the Western Unit increased 18.7 percent from the 1963 level (table 1). The 1964 level is 3.4 percent below this Unit's peak population index, reached in 1959, and is 14.7 percent above the 10-year average index (1954-1963).

Figure 2. Trends in Breeding-population Indexes by Management Units

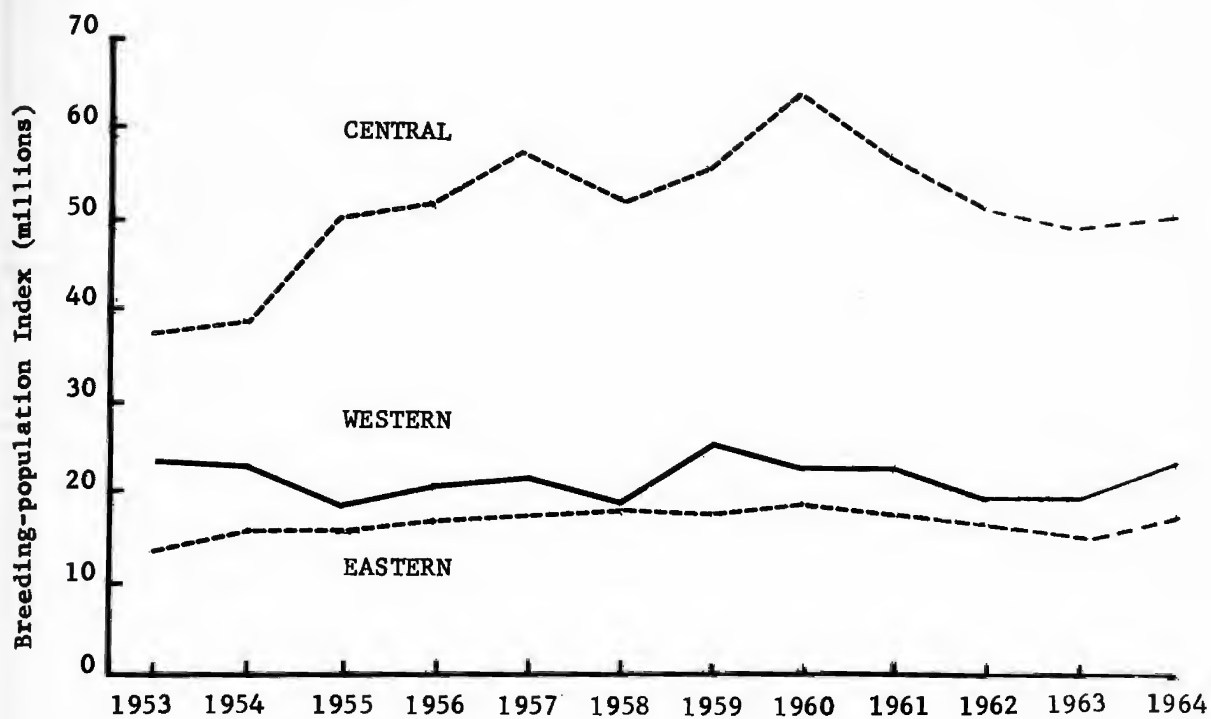
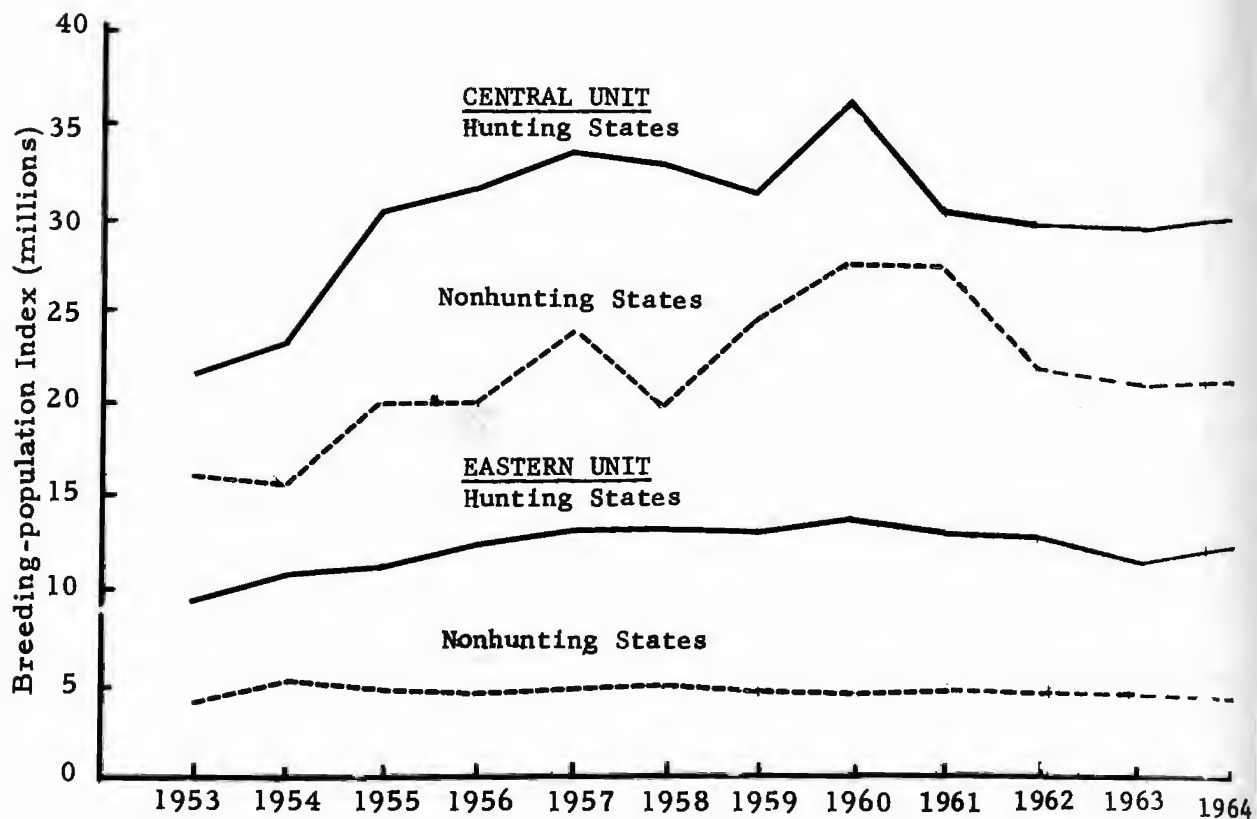


Figure 3. A Comparison of Trends in Breeding-population Indexes for Hunting and Nonhunting States within Management Units.



Discussion of population index trends

Breeding mourning dove population indexes for all management units increased this year from their 1963 levels. Despite a small decrease in the nonhunting States of the Eastern Management Unit, the entire Unit showed an increase and is presently above its 10-year average. This increase follows 3 years of decline from the peak 1960 index.

The indexes of both the hunting and nonhunting States of the Central Management Unit increased slightly over the 1963 levels. The entire Central Unit showed a 3.6 percent increase, which is also the first increase since 1960.

The largest increase in 1964 was in the Western Management Unit.

The 1964 breeding dove population index for the entire United States showed an increase of 7.9 percent over 1963. The current index is 2.7 percent above the 10-year average and 10.2 percent below the peak 1960 index.

To date, Ontario is the only Canadian Province which has provided comparable dove population status data. The average number of doves heard calling on comparable routes decreased slightly (3.9 percent) from the 1963 level in Ontario (table 2).

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Table 1.--Trends in doves heard calling on call-count routes, 1963 to 1964

EASTERN MANAGEMENT UNIT - HUNTING STATES

State	Est. dove habitat (sq. mi.)	Compa- rable routes	Percent change in number of doves heard comp. routes	Adjusted average heard per route & indexes *				Percent change
				1963		1964		
				Heard	Index	Heard	Index	
Ala.	51,078	27	+ 29.75	16.0	817	20.8	1,062	
Del.	1,978	1	- 12.50	40.0	79	35.0	69	
Fla.	54,262	21	+ 15.38	12.4	673	14.3	776	
Ga.	58,518	22	+ 56.34	20.4	1,194	31.9	1,867	
Ill.	55,947	29	- 9.87	30.0	1,678	27.0	1,511	
Ky.	40,109	19	+ 12.79	25.6	1,027	28.9	1,159	
La.	45,177	25	- 18.34	12.8	579	10.4	470	
Md.	9,393	12	+ 0.01	19.4	182	19.6	184	
Miss.	47,420	22	+ 15.04	20.9	989	24.0	1,138	
N. C.	44,232	17	+ 4.55	28.8	1,274	30.1	1,331	
Pa.	23,465	14	+ 28.01	7.5	175	9.6	225	
R. I.	**	2	+ 62.50	11.0	**	17.9	**	
S. C.	30,594	19	+ 4.76	28.5	872	29.9	915	
Tenn.	41,961	24	- 3.76	22.2	931	21.4	898	
Va.	37,904	11	+ 14.94	35.7	1,353	41.0	1,554	
W. Va.	16,863	3	+ 26.08	10.1	170	12.7	214	
Sub- Total	558,901	268			11,993		13,373	+11.5

EASTERN MANAGEMENT UNIT - NONHUNTING STATES

Conn.	3,919	1	- 20.00	4.5	17	3.6	14	
Ind.	36,205	8	+ 3.20	28.6	1,035	29.5	1,068	
Me.	**	3	-100.00	1.3	**	0.0	**	
Mass.	1,977	22	+ 27.86	3.9	8	5.0	10	
Mich.	28,511	9	- 23.96	33.8	964	25.7	733	
N. H.	**	4	+100.00	2.6	**	5.2	**	
N. J.	7,522	7	+ 3.25	16.6	125	17.1	129	
N. Y.	11,982	10	- 10.48	25.4	304	22.7	272	
Ohio	41,122	15	- 3.72	21.1	868	20.3	835	
Vt.	**	1	0.00	2.0	**	2.0	**	
Wisc.	38,300	19	+ 8.15	27.5	1,053	29.7	1,138	
Sub- Total	169,538	99			4,374		4,199	- 4.0
Eastern Unit Total	728,439	367			16,367		17,572	+ 7.4

Table 1.--Trends in doves heard calling on call-count routes, 1963 to 1964 - con.

CENTRAL MANAGEMENT UNIT - HUNTING STATES

State	Est. dove habitat (sq. mi.)	Compa- rable routes	Percent change in number of doves heard comp. routes	Adjusted average heard per route & indexes *				Percent change
				1963		1964		
				Heard	Index	Heard	Index	
Ark.	52,725	11	+ 4.87	25.8	1,360	27.1	1,429	
Colo.	72,777	15	+ 18.80	12.5	910	14.8	1,077	
Kans.	92,113	22	+ 6.50	56.5	5,204	60.2	5,545	
Mo.	69,270	18	+ 9.56	36.2	2,507	39.7	2,750	
N. Mex.	109,360	15	+ 14.08	30.9	3,194	35.3	3,860	
N. Dak.	70,054	23	+ 0.98	33.1	2,319	33.4	2,340	
Okla.	69,283	11	- 5.46	44.1	3,055	41.7	2,889	
Texas	263,644	44	- 1.70	39.5	10,414	38.8	10,229	
Sub- Total	799,226	159			28,963		30,119	+ 4.0

CENTRAL MANAGEMENT UNIT - NONHUNTING STATES

Iowa	55,986	15	+ 4.08	72.2	4,044	75.1	4,205	
Minn.	60,007	13	+ 25.99	25.1	1,506	31.6	1,896	
Mont.	124,369	17	+ 1.71	63.8	7,939	64.9	8,072	
Nebr.	76,653	21	+ 12.63	43.9	3,367	49.4	3,787	
S. Dak.	73,475	11	- 3.75	29.7	2,180	28.6	2,101	
Wyo.	82,080	15	- 22.57	21.4	1,756	16.6	1,363	
Sub- Total	472,570	92			20,792		21,424	+ 3.0
Central Unit Total	1,271,796	251			49,755		51,543	+ 3.6

Table 1.--Trends in doves heard calling on call-count routes, 1963 to 1964 - con.

WESTERN MANAGEMENT UNIT - HUNTING STATES

State	Est. dove habitat (sq. mi.)	Compa- rable routes	Percent change in number of doves heard comp. routes	Adjusted average heard per route & indexes *				Percent change
				1963		1964		
				Heard	Index	Heard	Index	
Ariz.	113,580	47	+ 21.61	31.2	3,539	37.9	4,305	
Calif.	141,123	52	+ 9.74	48.0	6,774	52.7	7,437	
Idaho	49,685	10	+ 13.03	27.6	1,371	31.2	1,550	
Nev.	108,704	16	+ 61.29	23.3	2,533	37.6	4,087	
Oreg.	72,263	16	+ 8.02	39.6	2,864	42.8	3,093	
Utah	74,111	14	- 4.27	25.5	1,890	24.4	1,808	
Wash.	46,884	16	+ 33.76	33.1	1,554	44.3	2,077	
<hr/>								
Western Unit								
Total	606,350	171			20,525		24,357	+18.7
<hr/>								
U.S. Total								
	2,606,585	789			86,647		93,472	+ 7.9

Table 2.--Trends in doves heard calling on Canadian call-count routes, 1963 to 1964

Province	Est. dove habitat (sq. mi.)	Compa- rable routes	Average heard per route and indexes*				Percent change
			1963		1964		
			Heard	Index	Heard	Index	
Ontario***	**	26	12.7	**	12.2	**	- 3.9

* From a base year, average doves heard calling per route for each State has been adjusted annually according to the percentage change from the preceding year in counts on comparable routes. The index, expressed in thousands, is the product of the adjusted average doves heard per route and the estimated area of dove habitat.

** The area of dove habitat has not been estimated for Maine, New Hampshire, Rhode Island, Vermont, or Canadian Provinces.

*** To date only Ontario has submitted comparable data for routes run in consecutive years.

Table 3.--Trends in the breeding-population index, 1957-64

The first figure listed for each State by years is the adjusted average doves heard calling per route. The method of adjustment is described in the text. The base year for adjustments was 1956 or 1957. States for which 1957 was the base year are those that reorganized call-count routes in that year. These States are Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

The second figure for each State is the breeding-population index. The index, expressed in thousands, is the product of the adjusted average doves heard per route and the estimated area of dove habitat. (Habitat area is given in table 1).

Data for the years 1953 through 1956 may be obtained from Special Scientific Report--Wildlife No. 70.

State	1957	1958	1959	1960	1961	1962	1963	1964
Alabama	21.1 1,078	23.8 1,216	18.7 955	22.7 1,159	20.1 1,027	19.5 996	16.0 817	20.8 1,062
Arizona	33.1 3,759	31.0 3,521	33.6 3,816	26.3 2,987	47.1 5,350	32.8 3,725	31.2 3,539	37.9 4,305
Arkansas	32.6 1,719	33.7 1,777	30.0 1,582	28.0 1,476	30.5 1,608	16.9 891	25.8 1,360	27.1 1,429
California	36.7 5,179	41.2 5,814	55.1 7,776	59.5 8,397	42.7 6,026	48.0 6,774	48.0 6,774	52.7 7,437
Colorado	57.6 4,192	46.4 3,377	23.8 1,732	34.9 2,540	16.8 1,223	16.8 1,223	12.5 910	14.8 1,077
Connecticut	9.0 35	7.0 27	6.0 24	9.6 38	5.2 20	5.2 20	4.5 17	3.6 14
Delaware	31.0 61	30.0 59	54.0 107	49.0 97	36.0 71	44.0 87	40.0 79	35.0 69
Florida	13.8 749	11.0 597	11.0 597	12.9 700	12.0 651	14.5 787	12.4 673	14.3 776
Georgia	21.4 1,252	15.9 930	18.9 1,106	24.0 1,404	20.4 1,194	23.8 1,393	20.4 1,194	31.9 1,867

Table 3.--Trends in the breeding-population index, 1957-64

State	1957	1958	1959	1960	1961	1962	1963	1964
Idaho	27.0 1,341	23.8 1,183	26.7 1,327	30.8 1,530	27.2 1,351	27.6 1,371	27.6 1,371	31.2 1,550
Illinois	30.3 1,695	32.8 1,835	33.2 1,857	31.6 1,768	36.0 2,014	29.3 1,639	30.0 1,678	27.0 1,511
Indiana	32.8 1,188	34.0 1,231	35.4 1,282	26.8 970	30.2 1,093	25.0 905	28.6 1,035	29.5 1,068
Iowa	57.6 3,225	50.6 2,833	82.6 4,624	66.0 3,695	82.5 4,619	80.0 4,479	72.2 4,044	75.1 4,205
Kansas	42.9 3,952	42.9 3,952	50.2 4,624	61.7 5,683	62.7 5,775	63.8 5,877	56.5 5,204	60.2 5,545
Kentucky	22.3 894	27.8 1,115	27.4 1,099	28.3 1,135	26.7 1,071	27.1 1,086	25.6 1,027	28.9 1,159
Louisiana	17.0 768	15.9 718	13.8 623	14.8 669	13.7 619	10.9 492	12.8 579	10.4 470
Maine*			1.5	2.5	3.0	3.0	1.3	0.0
Maryland	17.8 167	17.0 160	19.7 185	17.0 160	15.7 147	19.0 178	19.4 182	19.6 184
Massachusetts	8.3 16	3.7 7	5.3 10	7.6 15	5.0 10	6.7 13	3.9 8	5.0 10
Michigan	22.1 630	24.8 707	30.1 858	27.2 775	28.8 821	22.9 653	33.8 964	25.7 733
Minnesota	33.1 1,986	28.9 1,734	24.1 1,446	23.4 1,404	30.1 1,806	24.9 1,494	25.1 1,506	31.6 1,896
Mississippi	26.0 1,233	31.7 1,503	25.8 1,223	25.9 1,228	22.7 1,076	24.2 1,148	20.9 989	24.0 1,138
Missouri	61.0 4,225	52.7 3,651	46.4 3,214	49.5 3,429	44.6 3,089	42.1 2,916	36.2 2,507	39.7 2,750

Table 3.--Trends in the breeding-population index, 1957-64

State	1957	1958	1959	1960	1961	1962	1963	1964
Montana	36.8 4,577	38.2 4,751	39.0 4,850	77.3 9,614	66.5 8,271	44.0 5,472	63.8 7,939	64.9 8,072
Nebraska	53.6 4,109	35.1 2,691	73.4 5,626	81.8 6,270	66.3 5,082	52.3 4,009	43.9 3,367	49.4 3,787
Nevada	28.0 3,044	18.1 1,968	33.2 3,609	24.1 2,620	29.6 3,218	14.9 1,620	23.3 2,533	37.6 4,087
New Hampshire*			3.0	4.7	3.8	2.8	2.6	5.2
New Jersey	14.0 105	15.7 118	18.3 138	18.3 138	16.3 123	16.2 122	16.6 125	17.1 129
New Mexico	23.0 2,515	24.5 2,679	32.0 3,500	55.6 6,080	37.4 4,090	32.8 3,587	30.9 3,194	35.3 3,860
New York	30.2 362	25.0 300	18.7 224	28.6 343	23.5 282	27.1 325	25.4 304	22.7 272
North Carolina	24.4 1,079	22.6 1,000	27.9 1,234	27.0 1,194	23.7 1,048	26.1 1,154	28.8 1,274	30.1 1,331
North Dakota	24.7 1,730	30.3 2,123	33.1 2,319	35.0 2,452	36.9 2,585	33.2 2,326	33.1 2,319	33.4 2,340
Ohio	20.2 831	24.3 999	20.3 835	17.8 732	21.6 888	25.8 1,060	21.1 868	20.3 835
Oklahoma	51.0 3,533	55.8 3,866	55.2 3,824	45.1 3,125	46.0 3,187	40.2 2,785	44.1 3,055	41.7 2,889
Oregon	33.8 2,442	28.8 2,081	42.3 3,057	38.8 2,804	43.0 3,107	36.8 2,659	39.6 2,864	42.8 3,093
Pennsylvania	15.0 352	13.1 307	14.3 336	12.7 298	13.2 310	10.9 256	7.5 175	9.6 225
Rhode Island*			14.0	8.0	10.0	11.0	11.0	17.9

Table 3.--Trends in the breeding-population index, 1957-64

State	1957	1958	1959	1960	1961	1962	1963	1964
South Carolina	30.0 918	31.6 967	30.2 924	32.0 979	31.7 970	28.5 872	28.5 872	29.9 915
South Dakota	74.3 5,459	51.8 3,806	47.0 3,453	29.4 2,160	35.5 2,608	27.4 2,013	29.7 2,180	28.6 2,101
Tennessee	34.9 1,464	31.7 1,330	26.6 1,116	27.0 1,133	22.9 961	26.4 1,108	22.2 931	21.4 898
Texas	50.9 13,419	50.3 13,261	48.7 12,839	51.1 13,472	41.5 10,941	43.3 11,416	39.5 10,414	38.8 10,229
Utah	43.5 3,224	28.6 2,120	43.5 3,224	35.2 2,609	28.0 2,075	25.7 1,904	25.5 1,890	24.4 1,808
Vermont*			1.0	8.0	0.0	2.0	2.0	2.0
Virginia	32.2 1,221	40.6 1,539	43.2 1,637	43.2 1,637	40.6 1,539	35.1 1,330	35.7 1,353	41.0 1,554
Washington	48.4 2,269	42.4 1,988	51.3 2,405	35.3 1,655	31.0 1,453	36.9 1,730	33.1 1,554	44.3 2,077
West Virginia	7.7 130	3.4 57	4.2 71	10.9 184	11.4 192	23.9 403	10.1 170	12.7 214
Wisconsin	37.9 1,452	34.3 1,314	31.6 1,210	36.0 1,379	35.7 1,367	25.0 958	27.5 1,053	29.7 1,138
Wyoming	30.9 2,536	22.7 1,863	26.4 2,167	24.1 1,978	28.3 2,323	26.0 2,134	21.4 1,756	16.6 1,363
TOTAL INDEX	96,118	89,074	98,665	104,115	97,281	87,390	86,647	93,472
PERCENTAGE CHANGE	+8.8	-7.3	+10.8	+5.9	-6.6	-10.2	-0.85	+7.9

* Maine, New Hampshire, Rhode Island, and Vermont first established call-count routes in 1959. No estimate has been made of the square miles of dove habitat in these States.

Table 4.--Summary of call-count routes by States

Includes all routes run in 1964, but only comparable routes for 1963

Route numbers followed by letter R indicate randomized routes

ALABAMA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
5R	Madison	41	32	25	14
8R	Colbert-				
	Franklin	6	10	13	12
20R	Morgan-				
	Marshall	39	31	28	16
22R	Cherokee-				
	Etowah	--	82	--	43
23R	Cherokee-				
	DeKalb	36	52	29	40
29R	Etowah	29	15	32	6
34R	Walker	31	29	17	15
35R	Jefferson	8	23	13	22
41R	Pickens	6	20	17	51
43R	Jefferson	7	32	11	9
47R	Claburne-				
	Randolph	6	13	15	16
52R	Shelby-				
	Bibb	8	15	2	2
59R	Hale-				
	Perry	14	20	12	4
63R	Coosa-				
	Elmore	5	5	4	1

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
69R	Perry-				
	Hale	59	75	27	33
75R	Lee-				
	Macon	18	23	1	11
76R	Lee	13	22	1	1
77R	Choctaw	1	8	1	2
81R	Dallas	3	10	17	10
89R	Wilcox	9	10	4	2
90R	Wilcox-				
	Butler	11	12	5	7
96R	Choctaw-				
	Washington	4	1	3	3
99R	Monroe	6	10	0	2
103R	Pike-Coffee-				
	Barbour	3	12	33	10
105R	Barbour-				
	Henry	16	22	8	13
107R	Clarke	20	22	63	4
116R	Washington-				
	Mobile	2	2	0	0
121R	Covington	13	11	13	4

ARIZONA

6R	Mohave	31	53	11	47
7R	Mohave	--	5	--	22
14R	Mohave	16	0	27	0
15R	Mohave	21	41	19	4
22R	Mohave	26	5	76	2
35R	Yavapai	13	50	5	17
42R	Yavapai	11	40	2	10
56R	Navaajo	9	15	0	4

76R	Graham	4	0	33	3
78R	Apache	1	0	1	0
79R	Apache	0	5	0	0
100aR	Yuma	21	12	205	123
125R	Greenlee	51	39	108	220
137R	Cochise	9	0	17	43
154R	Cochise	16	0	27	0
155R	Cochise	21	33	105	362

ARIZONA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
157R	Mohave	2	1	4	17
169R	Cochise	34	34	44	28
185R	Cochise	0	4	0	0
188R	Apache	11	6	0	2
203R	Coconino	1	0	0	1
206R	Coconino	--	38	--	6
224R	Coconino	1	7	5	0
241R	Coconino	26	41	6	18
250R	Apache	19	32	0	5
257R	Yavapai	37	47	17	8
260R	Coconino	0	3	0	0
263R	Coconino	0	0	0	0
275R	Coconino	30	36	3	13
293R	Navajo	--	2	--	6
306R	Coconino	7	1	2	0
320R	Navajo	1	20	1	1
331R	Navajo	0	4	3	6

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
550R	Yuma	43	17	2	3
554R	Maricopa	46	30	8	6
560R	Yuma	60	41	18	5
563R	Yuma	45	31	46	56
564R	Maricopa	35	18	10	23
574R	Maricopa	40	75	3	7
586R	Yuma	38	38	101	89
601R	Maricopa	44	68	13	18
603R	Pinal	29	68	4	21
615R	Pinal	10	1	10	1
620R	Pima	15	27	1	4
622R	Pima	24	35	76	35
623R	Pima	10	2	34	136
626R	Pima	17	35	0	0
632R	Pima	12	9	2	0
634R	Pima	22	67	11	20
637R	Santa Cruz	22	41	1	2

ARKANSAS

1	Arkansas	95	93	153	102
2	Arkansas	73	77	85	72
3	Craighead	18	21	28	40
4	Craighead	29	34	40	37
5	Ouachita	14	1	2	3
6	Ouachita	3	6	5	0

7	Poinsett	22	26	35	49
8	Montgomery	3	8	5	3
9	Scott	9	21	3	3
10	Marion	11	11	4	9
12	Van Buren	12	5	16	8

CALIFORNIA

2R	Siskiyou	32	26	48	46
3R	Humbolt	0	4	2	1
4R	Trinity	4	4	12	7
5R	Trinity	1	3	3	7
6R	Humbolt	0	0	2	0
7R	Shasta	13	6	0	0
8R	Humbolt	1	3	1	2
9R	Shasta	5	4	0	0
10R	Lassen	--	64	--	435
11R	Mendocino	1	19	5	22

12R	Tehama-				
	Butte	69	145	65	30
13R	Lassen	14	23	2	1
14R	Butte	18	14	2	0
15R	Butte-				
	Plumas	3	2	0	0
16R	Plumas	7	1	5	18
17R	Mendocino	6	6	5	10
18R	Plumas	2	1	9	5
19R	Lake	34	20	11	8

CALIFORNIA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
21R	Colusa-				
	Yolo	22	24	51	63
22R	Colusa-				
	Sutter	14	28	36	42
23R	Nevada	10	5	0	0
24R	Napa	56	107	28	13
26R	Napa-				
	Solano	14	20	27	32
27R	Alpine	1	4	10	3
28R	Contra-				
	Costa	30	20	34	17
29R	San				
	Joaquin	1	14	41	71
30R	Tuolumne	2	1	0	1
31R	Tuolumne	39	44	12	14
33R	Merced-				
	Stanislaus	29	18	56	118
35R	Merced	7	20	34	24
36R	Mono	15	3	0	0
37R	Hollister	21	34	19	18
38R	Madera	36	37	1	8
40R	San Benito-				
	Fresno	42	39	14	14
41R	Fresno	13	21	22	51
43R	Monterey-				
	San Benito	28	25	32	29
44R	Fresno-				
	Tulare	47	36	221	238

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
45R	Monterey-				
	San Luis				
	Obispo	77	59	103	72
46R	Kings	32	36	64	61
47R	Tulare	41	47	34	35
48R	Tulare	34	33	68	40
49R	Tulare	79	94	54	154
50R	San Luis				
	Obispo-				
	Santa				
	Barbara	268	251	54	9
51R	San Luis				
	Obispo-				
	Kern	34	9	39	7
52R	Kern	15	40	1	0
53R	San				
	Bernardino	3	0	2	1
54R	Ventura-				
	Los Angeles	15	27	55	46
55R	San				
	Bernardino	9	5	62	24
57R	San Diego-				
	Riverside	27	26	64	26
58R	Riverside	37	36	294	179
59R	Imperial	38	37	158	146
60R	Imperial	16	16	10	28
61R	Imperial	16	15	64	94

COLORADO

1	Crowley	32	26	42	51
3	Alamosa	5	19	2	9
4	Otero	35	42	49	58
5	Bent	53	36	62	42
6	Prowers	10	15	23	33
7	Adams	9	10	8	10
9	Arapahoe	19	33	20	35
11	Moffat	8	2	2	1
12	Douglas	27	15	8	24

13	Larimer-				
	Weld	15	10	23	45
15	Larimer	51	60	78	31
16	Phillips	7	26	6	17
17	Yuma-				
	Washington	0	0	1	0
18	Yuma	18	38	10	30
19	Garfield	3	15	46	49
22	Montezuma	--	30	--	66

CONNECTICUT

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
2	New London	5	4	0	0

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
4	New London	--	6	--	0

DELAWARE

1	Kent	40	35	6	12
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2	Sussex	--	42	--	21
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FLORIDA

1R	Santa Rosa	12	17	10	4
2R	Okaloosa	16	15	1	3
3R	Walton	9	13	6	2
4R	Franklin	0	0	0	0
5R	Clay	15	4	4	0
7R	Putnam	26	20	19	37
10R	Alachua-				
	Marion	28	13	27	35
11R	Volusia	13	24	0	1
12R	Sumter-				
	Marion	1	8	0	0
13R	Lake	29	20	2	2
14R	Orange	6	12	20	14

15R	Osceola	1	1	9	6
16R	Osceola	1	14	3	26
17R	Hillsborough	5	7	4	4
18R	Okeechobee	10	15	11	10
19R	Okeechobee	14	20	10	10
20R	Okeechobee	21	25	24	8
21R	Glades	0	11	11	2
22R	Broward-				
	Palm Beach	2	2	0	2
23R	Collier	0	0	0	0
24R	Dade-Collier-				
	Monroe	0	0	0	0

GEORGIA

10R	Gilmer-				
	Pickens	15	14	8	3
16R	Gordon-				
	Barstow	11	38	2	6
18R	Dawson-				
	Forsyth	7	16	8	1
25R	Cobb-				
	Cherokee	3	4	6	3
27R	Gwinnett-				
	Barrow	18	24	4	4
28R	Jackson-				
	Barrow	49	31	12	6
29R	Madison-				
	Oglethorpe	43	59	14	15

31R	Haralson	12	23	31	14
33R	Walton	22	23	7	6
34R	Oconee	11	6	5	4
38R	Heard	15	22	20	42
47R	Troup-				
	Chambers	19	32	11	10
60R	Upson	6	48	4	11
67R	Screven-				
	Jennings-	29	80	16	16
79R	Chattahoochee-				
	Stewart	9	7	0	4
85R	Laurens-				
	Wheeler	14	36	23	10
90R	Effingham	27	32	2	5

GEORGIA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
105R	Worth-				
	Turner	13	17	11	44
111R	Wayne	11	25	7	17

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
118R	Irwin-				
	Berrien	12	22	12	31
121R	Pierce	31	27	13	2
140R	Lowndes	10	19	3	5

IDAHO

56R	Shoshone	1	0	3	0
62R	Caribou	28	11	37	23
66R	Kootenai	14	31	6	10
73R	Lewis	15	5	6	8
85R	Bear Lake	26	48	121	149
100R	Clearwater	--	12	--	0
178R	Canyon	20	31	109	65
191R	Valley	--	16	--	8
226R	Lemhi	--	0	--	0

227R	Jefferson	--	6	--	19
235R	Gem	58	55	37	33
241R	Jerome-				
	Gooding	15	26	57	50
247R	Elmore	--	77	--	2
252R	Custer	54	53	12	15
258R	Cassia	7	9	15	12
266R	Camas	--	26	--	54

ILLINOIS

2	Lake	14	10	15	8
3	Williamson	27	25	34	28
4	Williamson-				
	Jackson	43	53	34	11
5	Ogle	23	12	8	6
6	Ogle	13	13	5	6
7	Hancock	45	24	50	2
8	Marshall-				
	Putnam	9	6	2	5
9	Fulton-				
	McDonough	87	62	9	2
10	Union	53	69	40	34
11	Macon	3	4	7	2
12	Ogle	--	14	--	1
13	Washington	51	45	73	36
14	Lawrence	43	43	47	25
15	Champaign	2	0	6	7
16	Whiteside	16	8	16	2

17	Madison	26	10	37	23
18	Madison-				
	Jersey	45	39	32	31
19	DeKalb	2	4	3	9
20	Mason	38	24	26	20
21	Mason	62	74	36	23
22	St. Clair	11	7	23	7
23	St. Clair	16	8	42	31
24	St. Clair-				
	Monroe	15	29	35	15
25	Lee	11	12	0	13
26	Lee	24	10	12	17
27	St. Clair	56	52	76	47
30	Winnebago	6	19	2	10
31	Winnebago	8	26	5	12
32	St. Clair-				
	Madison	47	28	39	19
33	Tazwell	15	15	12	15

INDIANA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
4	Daviess	--	25	--	58
9	Jackson	--	25	--	41
10	Newton	33	36	12	10
12	Wayne	--	10	--	12
13	Fulton	17	21	10	9
14	Grant	27	21	13	9
15	Daviess	--	24	--	64

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
16	Orange	--	28	--	63
17	Morgan	--	33	--	41
18	Boone	16	20	9	14
19	Whitley	24	28	7	17
20	Whitley	32	35	5	12
21	Newton	32	34	14	21
22	LaGrange	39	32	13	12

IOWA

1.	Clay	25	18	10	11
2	Clay (N.)	23	21	24	19
3	Winnebago	51	70	28	15
4	Worth	--	30	--	27
5	Story	10	7	8	10
6	Boone	3	12	28	23
7	Emmet	--	36	--	14
8	Emmet	--	32	--	11
9	Polk-				
	Dallas	31	19	23	48
10	Mills-				
	Fremont	66	38	31	55
11	Lee	--	28	--	9

12	Bremer-				
	Fayette	27	22	16	9
13	Bremer-				
	Chickasaw	20	19	12	7
14	Clay	10	22	20	14
15	Linn	47	43	23	21
16	Clarke-				
	Decatur	85	128	100	82
17	Kossuth	--	30	--	16
19	Wapello	96	98	33	56
21	Woodbury	46	51	49	20
22	Cedar	26	21	18	3

KANSAS

14R	Norton	35	28	80	49
19R	Morris	26	35	86	165
19aR	Jewell	91	93	95	97
21R	Osage	--	157	--	65
24R	Miami	40	19	69	81
27R	Osborne	70	47	61	49
40R	Lincoln	49	41	61	88
42R	Marion-				
	Harvey	28	80	32	89
45R	Greenwood	34	27	58	42
52R	Lane	25	6	41	84
65R	Barton	43	69	42	42
68R	Saline-				
	McPherson	69	212	126	173

74R	Harper	155	85	91	107
79R	Chautauqua-				
	Elk	22	27	28	90
79aR	Reno-				
	Kingman	40	21	112	57
82R	Commanche-				
	Kiowa	57	83	26	26
182R	Nemaha	105	73	115	172
195R	Pottawatomie	62	76	70	110
200R	Thomas	27	30	8	26
214R	Leavenworth-				
	Jefferson	--	103	--	75
218R	Wichita-				
	Kearney	21	14	12	4

KANSAS - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
225R	Finney-				
	Gray	46	37	56	10
232R	Finney-Haskell-				
	Gray	10	19	22	34

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
238R	Grant-				
	Stevens	4	6	17	21

KENTUCKY

1R	Kenton-				
	Pendleton	20	28	4	26
2R	Trimble-				
	Henry	19	35	4	18
17R	Breckinridge-				
	Meade	49	49	17	15
20R	Spencer-				
	Nelson	19	23	16	7
23R	Bath-				
	Montgomery	18	22	2	5
25R	Lawrence-				
	Johnson	2	1	1	1
27R	Henderson	65	74	106	88
34R	Washington	40	40	17	12
41R	Floyd	0	2	0	0
43R	Crittenden	33	40	40	47

49R	Hart	28	15	13	9
53R	Lincoln-				
	Rockcastle	21	30	1	16
60R	Ballard-				
	McCracken	36	38	78	54
64R	Muhlenberg-				
	Logan	23	28	10	19
79R	Christian	76	73	83	111
82R	Logan-				
	Warren	33	36	24	17
92R	Graves-				
	Weekly	47	58	62	47
95R	Whitley-				
	Campbell	2	7	2	0
96R	Bell	1	1	0	0

LOUISIANA

1	Sabine-				
	Natchitoches	11	5	5	4
2	Webster-				
	Claiborne	10	9	12	12
3	Acadia	1	0	1	1
5	E. Baton Rouge-				
	Iberville	6	0	3	8
7	E. Feliciana	11	7	1	0
8	Tangipahoa	18	10	2	4
9	Concorida	34	30	6	7
10	Caldwell-				
	Ouachita	11	20	8	7

11	Rapides	3	4	2	4
12	Rapides	7	3	5	2
13	Vernon-				
	Natchitoches	7	5	4	5
14	Natchitoches	19	16	1	0
15	Lafayette	4	4	4	6
16	Vermillion	0	0	0	0
17	Morehouse	27	23	6	6
18	Iberville	6	2	13	5
20	Rapides	9	6	10	6
21	Rapides	11	9	11	7
24	Grant	26	29	19	29

LOUISIANA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
25	Vernon	21	16	3	5
26	Lafayette-				
	St. Martin	23	4	22	4
28	Bienville	17	10	7	6

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
29	Pointe				
	Coupe	13	11	6	6
30	Union	6	12	6	6
31	Franklin	37	41	9	6

MAINE

1	Kennebec-				
	Lincoln-				
	Sagadahoc	2	0	0	5

2	Sagadahoc-				
	Kennebec	1	0	2	0
5	Oxford-				
	Cumberland	1	0	2	0

MARYLAND

1R	Garrett	16	19	9	9
2R	Allegheny	5	5	4	1
3R	Frederick-				
	Carroll	12	8	5	18
4R	Howard	25	23	9	3
5R	Anne				
	Arundel	20	20	17	11
6R	Harford	27	38	51	43

7R	Baltimore-				
	Harford	19	16	20	36
8R	Anne				
	Arundel	6	9	1	8
9R	Calvert	42	33	11	2
10R	St. Marys	38	29	22	9
11R	Queen Annes	12	11	6	15
12R	Sommerset-				
	Worcester	11	24	2	13

MASSACHUSETTS

1	Barnstable	3	2	0	1
2	Barnstable	2	3	3	4
3	Plymouth	7	19	0	3
4	Plymouth	4	11	2	0
5	Bristol-				
	Plymouth	5	4	1	0
6	Bristol	9	5	3	4
7	Norfolk	0	1	1	1
8	Essex	1	0	3	1
9	Middlesex	2	0	0	0
10	Worcester	1	1	3	5
11	Worcester	16	4	8	0

12	Worcester	3	3	0	0
13	Worcester	1	5	1	0
14	Worcester	1	2	0	0
15	Worcester	7	1	1	0
16	Hampshire	9	16	5	1
17	Franklin	3	12	0	0
18	Franklin-				
	Hampshire	1	2	1	7
19	Hampden	--	16	--	10
20	Hampshire	0	2	1	1
21	Hampshire	0	2	0	0
22	Berkshire	0	0	0	0
23	Berkshire	0	1	1	0

MICHIGAN

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
2	Washtenaw	24	36	4	7
3	Bay	33	18	3	8
4	Tuscola	21	27	4	8
5	Tuscola	11	8	3	3
6	Monroe	41	28	24	18
11	Newaygo	34	17	2	2
12	Newaygo	18	13	12	10

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
13	Ingham	26	15	4	3
15	Kalamazoo	--	56	--	4
19	Isabella(N.)	--	18	--	11
20	Isabella(W.)	--	23	--	10
21	Isabella(E.)	--	26	--	10
22	Isabella(S.)	--	30	--	12
24	Allegan	55	38	14	24

MINNESOTA

1R	Lake	0	0	0	0
2R	St. Louis	0	0	2	0
5R	Polk	1	7	3	3
13R	Mower	4	1	14	14
33R	Fillmore	15	14	7	8
44R	Marshall	54	52	98	103
69R	Koochiching	0	0	0	0
117R	Itasca	0	0	0	0

140R	Clay-Wilkin	32	46	25	4
160R	Grant-				
	Ottertail	45	45	13	22
182R	Isanti-				
	Kanabec	14	19	8	26
226R	Renville	26	54	25	17
278R	Martin-				
	Watsonwan	28	38	20	22

MISSISSIPPI

7R	Tishomingo-				
	Alcorn	16	38	35	33
12R	Union	116	107	84	46
13R	Prentiss-				
	Lee	31	54	18	29
15R	Coahoma-				
	Bolivar	29	30	49	46
22R	Itawamba	49	32	25	37
25R	Tallahatchie	46	51	57	50
28R	Chickasaw	40	44	20	47
33R	Sunflower-				
	Le Flore	52	59	21	27
35R	Montgomery	12	15	9	17
43R	Carroll-				
	Holmes	30	26	32	26

50R	Holmes-				
	Yazoo	52	48	13	30
56R	Sharkey-				
	Issquena	27	32	21	15
60R	Leake	9	18	15	21
73R	Rankin	9	19	19	64
74R	Smith	15	22	58	57
78R	Jefferson	13	10	10	7
89R	Lincoln	33	32	9	14
94R	Wayne	4	13	3	11
95R	Wayne	15	19	12	19
101R	Lamar-				
	Marion	17	32	5	17
113R	Hancock	1	5	3	0
115R	Jackson	1	4	1	2

MISSOURI

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
5R	Stoddard-				
	Butler	67	62	68	90
7R	New Madrid	63	62	84	69
7aR	Osage	18	43	19	22
15R	Osage-				
	Maries	30	28	14	15
26R	Johnson-				
	Cass	64	32	77	48
29R	St.				
	Genevieve	62	41	72	137
46R	Dallas-				
	Webster	16	21	62	58
52R	Iron	3	3	3	0
55R	Cape				
	Girardeau	14	17	77	82

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
61R	Vernon	36	65	116	312
64R	Texas-				
	Howell	6	22	9	2
70R	Newton-				
	Barry	31	17	56	39
159R	Putnam-				
	Sullivan	42	73	51	46
162R	Knox-				
	Lewis	--	72	--	59
170R	Andrew-				
	Gentry	23	43	143	33
188R	Livingston	30	38	60	50
205R	Chariton	37	37	55	74
208R	Monroe	75	69	35	48
225R	Lincoln	31	37	30	56

MONTANA

1	Yellowstone	23	13	16	73
2	Lewis-				
	Clark	11	11	9	10
5	Valley	17	54	17	10
8	Phillips	85	126	16	53
9	Phillips	191	177	7	20
10	Phillips	--	39	--	20
11	Sheridan	11	22	11	2
12	Sheridan	19	26	6	15
13	Sheridan-				
	Roosevelt	11	13	17	28
14	Madison	--	7	--	24
15	Revelli	--	0	--	6
16	Powell	22	17	4	14

17	Lincoln	--	3	--	0
19	Dawson	--	8	--	156
20	Powder River--		32	--	5
27	Toole	--	20	--	2
28	Pondera-				
	Toole	28	24	4	0
35	Sweet Grass	91	87	22	47
38	Musselshell	62	18	19	28
40	Wheatland	34	64	103	101
41	Broadwater	55	29	4	5
42	Fergus	64	58	28	23
43	Phillips	--	66	--	28
44	Broadwater	17	17	4	2
45	Lake	23	21	15	14

NEBRASKA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
1R	Furnas	46	57	32	59
10R	Thayer	63	46	104	150
13R	Cherry	7	2	10	3
23R	Sioux	7	1	5	9
27R	Sheridan	6	3	14	9
34R	Rock	81	67	31	66
47R	Cedar-				
	Wayne	55	58	38	31
48R	Cherry	33	27	21	21
62R	Morrill	31	33	33	43
73R	Garfield	90	105	89	126
75R	Stanton	38	34	92	40
75aR	Antelope	14	17	38	35

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
90R	Blaine	12	24	23	95
109R	Lincoln	126	95	24	32
121R	Cass	31	42	75	59
139R	Perkins-				
	Chase	--	55	--	16
142R	Gage	42	65	145	171
144R	Dawson	26	73	53	93
146R	Buffalo	116	72	56	93
148R	Hamilton	23	70	52	159
157R	Frontier	12	15	25	16
160R	Kearney	--	123	--	56
331R	Boyo	84	156	68	163

NEVADA

1	Churchill	17	10	10	52
2	Clark	46	49	50	37
3	Clark-				
	Mohave	28	32	39	31
4	Clark	13	11	54	15
5	Clark	2	0	2	0
6	Elko-				
	White Pine	25	10	3	17
8	Lyon	--	16	--	18
9	Washoe	20	64	4	9
10	Lincoln	29	103	54	626
11	Nye	--	5	--	30

12	Pershing	7	42	13	319
13	Clark	0	0	0	1
16	Washoe	22	28	7	8
17	Lincoln	6	24	0	28
18	Lyon	25	17	4	0
20	Lincoln	--	65	--	162
21	Lander	--	7	--	0
22	Lander	--	7	--	5
23	Elko	11	3	2	21
24	Lander	--	2	--	0
25	Lyon	2	3	4	9
26	Eureka	0	12	12	6

NEW HAMPSHIRE

2	Merrimac-				
	Rockingham	4	2	2	0
3	Stafford, N.H.-				
	York, Maine	2	0	0	0

4	Stafford	1	5	0	0
5	Stafford-				
	Rockingham	3	13	0	0

NEW JERSEY

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
2	Sussex	8	8	14	13
4	Hunterdon	11	18	18	12
5	Cumberland	6	5	4	5
7	Salem	30	25	11	19
9	Ocean	12	21	3	8

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
10	Hunterdon	23	39	24	15
11	Somerset	65	44	34	26
12	Gloucester	--	36	--	20
13	Burlington	--	33	--	0

NEW MEXICO

2	Bernalillo-				
	Sandoval-				
	Sante Fe	26	81	3	2
3	Grant	73	75	89	35
4	Grant	--	50	--	73
5	Dona Ana	42	11	130	190
6	Hidalgo	39	50	59	22
7	Luna	2	4	30	33
8	San Miguel	8	14	26	12
9	San Miguel	15	9	3	4
10	Chavez	13	20	27	15

12	Chavez	--	65	--	65
15	Rio Arriba	45	31	34	40
16	Socorro	--	28	--	12
19	Chavez	44	49	15	26
20	San Miguel	--	1	--	8
23	Union	6	15	15	11
25	Roosevelt	32	63	10	12
28	Lee	7	13	23	9
31	Socorro	64	38	148	23
33	Dona Ana	10	13	16	10
36	Grant	--	66	--	39

NEW YORK

1	Niagara	33	43	7	12
2	Niagara	41	37	9	8
3	Orleans-				
	Genesee	46	29	12	6
4	Wayne-				
	Monroe	21	19	5	8
7	Suffolk	50	42	3	15

10	Albany	11	6	5	0
13	Wayne	6	9	4	7
14	Ulster	19	18	3	2
16	Columbia	2	1	0	2
18	Dutchess	19	18	2	3
19	Albany	--	9	--	1

NORTH CAROLINA

16R	Hertford-				
	Gates	41	27	35	35
22R	Surry-				
	Yadkin	83	81	58	52

24R	Guilford-				
	Caswell-				
	Almanaca	--	75	--	14

NORTH CAROLINA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
26R	Durham-				
	Person	24	27	22	23
36R	Wilkes-				
	Caldwell	3	8	4	3
52R	Madison-				
	Buncombe	5	4	2	3
54R	Burke	7	3	0	0
58R	Davison	43	38	30	8
60R	Randolph-				
	Chatham	--	43	--	37
63R	Wake-				
	Johnson	43	45	33	54
65R	Wilson-				
	Greene	33	35	40	51

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
70R	Macon	6	0	1	0
77R	Mecklenburg-				
	Cabarrus	39	25	10	24
80R	Montgomery-				
	Moore	38	16	55	20
92R	Jackson	2	5	0	0
96R	Richmond-				
	Montgomery	26	40	7	13
98R	Hope-				
	Cumberland	24	55	17	24
99R	Cumberland	23	36	14	25
112R	Onslow	1	16	1	5

NORTH DAKOTA

1	Burleigh	27	20	26	41
2	Burleigh	34	39	33	16
3	McHenry-				
	Bottineau	25	37	61	14
4	Sheridan	8	8	5	12
5	Stutsman	14	22	26	54
6	Stutsman	16	30	24	23
7	McHenry	76	60	25	11
8	Ward-				
	Renville	74	67	13	7
9	Ward	126	96	2	12
12	Ward	20	27	0	10
13	Ward	10	12	17	5
14	Burke	17	30	1	7

15	Burke-				
	Ward	12	30	9	10
16	Williams	6	9	7	4
17	Williams	1	0	6	1
18	Walsh-				
	Pembina	5	34	2	22
19	Walsh	70	18	44	15
20	Sargent	44	49	11	14
21	Ward	7	14	10	11
22	Montrail	0	1	4	2
23	Starke	13	6	21	22
24	Golden				
	Valley	12	8	22	12
26	McLean	14	20	24	33
25	Kidder	--	49	--	15

OHIO

1	Ottawa	17	30	18	17
2	Franklin	20	25	28	18

3	Franklin	19	21	8	10
9	Franklin	27	17	10	9

OHIO - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
10	Pickaway-				
	Ross	38	41	25	24
11	Athens	9	7	8	23
12	Wood	9	8	21	26
13	Wood	7	2	3	5
14	Wood	6	8	11	10
15	Wood	8	9	9	13

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
17	Union	24	16	5	4
18	Highland	22	37	4	24
19	Union	26	25	9	6
20	Delaware	32	24	2	5
21	Delaware-				
	Union	30	13	15	4

OKLAHOMA

1	Oklahoma-				
	Canadian	34	25	34	63
2	Tulsa-				
	Rogers	14	21	29	26
3	Pittsburg-				
	Latimer	--	24	--	13
4	Waggoner	36	32	27	37
5	Major	42	59	73	118
6	Camache	13	10	3	6

8	Cotton	50	59	36	159
9	McIntosh	--	26	--	21
10	Kingfisher	42	19	75	55
11	Alfalfa	--	140	--	122
12	Grady	30	38	12	23
13	Muskogee	16	22	13	27
14	Greer	--	40	--	--
15	Love	98	75	110	84
16	Johnston	84	74	68	30

OREGON

1	Umatilla	27	18	14	9
2	Jackson	27	39	34	78
3	Umatilla	78	102	72	29
4	Yamhill-				
	Polk	20	13	26	21
5	Klamath	9	34	7	65
6	Deschutes	33	28	4	13
7	Wasco	26	33	19	9
8	Linn	21	18	13	10
9	Douglas	53	49	1	13

10	Wasco	--	46	--	43
11	Morrow	42	34	100	81
12	Grant	51	58	27	31
13	Baker	8	10	18	19
14	Harney	25	28	5	16
15	Malheur	32	34	42	33
17	Hood River	--	21	--	18
18	Lake	28	32	17	24
19	Jefferson	57	50	51	84

PENNSYLVANIA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
2	Centre	6	10	2	2
3	Centre	9	8	1	0
5	Elk	1	0	1	0
6	Elk-				
	Jefferson	2	2	2	1
8	Lycoming-				
	Clinton	2	1	9	9
10	Franklin	15	27	4	8
13	York	14	12	12	10

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
14	Perry	17	14	5	6
15	Perry	19	16	2	3
16	Indiana	6	1	3	4
17	Indiana	1	5	2	2
18	Franklin	24	45	6	24
20	Lancaster	7	14	29	11
21	York	13	19	10	6
22	Erie	--	10	--	5
23	Crawford	--	4	--	2

RHODE ISLAND

1	Providence	5	12	1	1
2	Washington	11	14	1	3

3	Washington	--	4	--	1
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SOUTH CAROLINA

4R	Cherokee, S.C.-				
	Cleveland,				
	(N. C.)	38	22	68	56
6R	Oconee-				
	Rabun(Ga.)	6	5	1	5
10R	Union-				
	Chester	21	17	0	4
14R	Chesterfield	47	78	45	39
18R	Laurens	27	9	72	18
27R	Abbeville	34	38	11	19
32R	Kershaw-				
	Richland	11	7	8	10
47R	Horry	47	61	25	23
48R	Edgefield	19	14	10	7
50R	Aiken	23	19	20	9

51R	Orangeburg-				
	Aiken	22	28	9	12
53R	Clarendon	35	38	18	27
54R	Clarendon-				
	Williamsburg	12	29	0	3
56R	Williamsburg-				
	Georgetown	12	15	0	2
59R	Orangeburg	18	22	3	17
60R	Orangeburg	88	66	50	30
70R	Berkeley-				
	Charleston	0	0	0	2
71R	Hampton-				
	Jasper	32	52	17	2
73R	Charleston-				
	Dorchester	15	11	0	2

SOUTH DAKOTA

4R	Lawrence	0	0	0	0
7R	Moody	17	14	72	47

21R	Lincoln	21	48	31	24
159R	Campbell	22	16	20	7

SOUTH DAKOTA - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
171aR	Marshall	63	30	20	21
175R	Corson	--	36	--	30
181R	Charles Mix	93	110	54	74
193R	Dewey	20	14	45	88
203R	Day	77	72	26	20
249R	Kingsbury	--	75	--	42

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
271R	Aurora	86	45	37	38
272R	Jones	--	16	--	9
286R	Hutchinson-				
	McCook	13	15	31	44
306R	Shannon	--	23	--	151
313R	Tripp	40	71	24	16

TENNESSEE

6R	Macon-				
	Allen,Ky.	27	22	31	19
7R	Clay-				
	Jackson	27	26	11	12
9R	Pickett-				
	Wayne,Ky.	12	24	9	40
10R	Scott-				
	McCreary,Ky.	1	5	2	7
14R	Dyer	14	17	54	64
20R	Dickson	21	19	50	18
23R	Smith	16	24	25	34
24R	Jackson	30	19	8	14
29R	Union-				
	Claiborne	24	26	47	44
31R	Hawkins-				
	Green	18	24	30	47
36R	Gibson	15	12	63	52
38R	Benton	56	34	45	52

44R	Cannon-				
	DeKalb	20	21	40	30
47R	Morgan-				
	Cumberland	18	31	1	4
53R	Lauderdale	11	10	45	45
55R	Crockett-				
	Haywood	15	18	63	63
57R	Henderson	61	51	49	27
61R	Mauzy	25	18	4	27
63R	Rutherford	36	34	13	22
67R	Cumberland-				
	Rhea	23	29	3	7
71R	Sevier	18	10	4	12
75R	Hardeman-				
	Madison	36	36	25	17
84R	Grundy-				
	Sequatchee	10	7	0	0
89R	Shelby	21	17	50	48

TEXAS

1	Wise	--	37	--	130
2	Wise	--	38	--	26
3	Robertson	46	33	147	38
7	Bosque	8	24	113	102
8	Bosque	12	28	39	56
9	Wilson	143	149	51	82
10	Wilson	114	128	50	62
11	Victoria	--	4	--	49

12	Harris	15	21	27	17
14	Hidalgo	--	79	--	383
15	Chambers	--	4	--	21
16	Travis	18	11	35	67
17	Titus	19	15	27	43
18	Klebert	32	20	189	193
19	Crockett	--	4	--	5
20	Crockett	22	23	3	2

TEXAS - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
21	Val Verde	--	37	--	31
22	Val Verde	2	16	26	24
23	Throckmorton	56	43	67	72
24	Throckmorton	44	32	81	51
25	Lubbock	1	3	4	6
26	Lubbock	2	3	3	10
27	Webb	12	13	45	90
28	Jefferson	1	12	9	10
29	Bexar	--	73	--	39
30	Nolan	29	8	98	46
31	Wise	--	18	--	17
32	Childress	78	14	57	91
34	Hamphill	53	39	43	37
35	Hamphill	5	30	39	36
36	Randall	33	3	30	89
37	Randall	11	4	14	10
38	Potter	5	3	17	17
39	Potter	4	3	21	15
40	Taylor	44	29	32	7
41	Taylor	39	29	10	10
42	Jefferson	3	6	12	8
43	Roberts	38	14	67	14

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
44	Roberts	26	31	36	56
45	Tom Green	20	36	31	21
46	Tom Green	25	22	37	44
47	Willacy	78	155	29	87
48	Cameron	--	71	--	340
49	DeWitt	58	44	156	94
50	Bee	--	78	--	255
51	Colorado	11	16	89	83
52	Hudspeth	--	1	--	6
53	El Paso	1	0	179	115
54	Reeves	44	22	22	85
56	Midland-				
	Glasscock	--	0	--	4
57	Dawson	42	21	16	10
58	Brown	79	89	99	165
59	Edwards	19	33	16	24
60	Uvalde	43	122	56	31
61	Jim Hogg	4	1	2	4
63	Lamar	--	31	--	172
64	Smith	51	15	124	45
65	Hopkins	4	7	15	56

UTAH

2	Cache	3	12	2	15
4	Tooele	24	5	15	35
5	Juab-				
	Tooele	5	17	6	5
11	Kane	--	63	--	15
16	Juab	24	16	77	70
17	Juab-				
	Millard	22	40	35	77
19	Garfield	14	22	10	4

20	Wayne-				
	Garfield	3	0	5	0
22	Beaver	35	16	5	0
23	Washington	74	53	56	52
24	Rich	49	47	22	22
26	Wayne-				
	Emery	10	8	22	0
28	Grand	3	5	9	4
29	Summit	7	2	23	5
30	Juab	32	49	43	22

VERMONT

1	Addison	2	2	0	4
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2	Chittenden	--	0	--	0
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VIRGINIA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
1R	Russell	16	23	3	7
2R	Smythe-Tazwell	11	8	0	4
3R	Pittsylvania	63	71	16	32
4R	Rockingham-Augusta	10	20	3	4
5R	Shenandoah	11	15	0	3
6R	Loudoun-Prince William	22	25	2	12

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
7R	Prince William-Fauquier	19	71	8	6
8R	Richmond-Westmoreland	33	36	12	15
9R	Cumberland-Buckingham	65	52	4	1
10R	Sussex-Dinwiddle	17	23	16	17
11R	South Hampton-Sussex	88	64	52	39

WASHINGTON

2	Douglas	50	58	84	127
3	Spokane	36	26	29	39
4	Whitman	39	39	19	34
5	King	0	2	0	2
6	Okanogan	34	46	185	117
7	Skagit	5	11	5	10
8	Yakima	108	212	241	308
9	Yakima	40	70	182	194

10	Yakima	15	22	61	74
12	Yakima	17	28	64	139
13	Ferry	26	25	7	19
14	Stephens	19	25	4	12
17	Douglas	45	22	145	74
18	Chelan	12	21	48	30
19	Okanogan	63	57	64	69
20	Okanogan	27	53	25	43

WEST VIRGINIA

1	Hampshire	12	9	1	3
2	Mason	1	11	17	17

3	Mason	10	9	7	2
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WISCONSIN

1R	Rock-Dane	21	14	0	8
2R	Dunn	24	16	12	4
3R	Oneida	0	0	2	3
4R	Oconto	22	16	2	1
5R	Burnett	21	20	9	8
6R	Ashland	--	0	--	0
7R	Chippewa-Eau Claire	29	31	10	14

8R	Clark-Chippewa	4	4	0	0
18R	Wood	31	24	5	13
22R	Buffalo	42	74	3	14
35R	Vernon	18	15	7	2
37R	Monroe-Juneau	13	15	2	2
43aR	Richland-Sauk	8	12	2	1

WISCONSIN - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
43bR	Otagamie-				
	Wapaca	13	11	10	3
45R	Columbia-				
	Dane	31	37	16	18
49R	Iowa	23	24	1	2
69R	Manitowaco-				
	Calumet	--	20	--	4

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
91R	Green				
	Lake-				
	Waushara	2	8	0	8
117R	Washington	12	16	2	2
140R	Dodge	4	11	4	1
158R	Jefferson-				
	Waukesha	13	10	3	0

WYOMING

1	Johnson	21	24	12	1
2	Hot Springs	--	56	--	12
3	Natrona	46	20	7	17
4	Carbon	22	19	8	3
5	Freemont	19	27	1	8
6	Park	1	0	14	3
7	Platte	77	39	29	33
8	Washakie	--	21	--	55

12	Uinta	4	0	16	0
13	Niobrara	35	19	49	25
14	Big Horn	26	35	37	68
15	Lincoln	8	6	5	2
17	Sweetwater	1	1	1	0
18	Freemont	9	8	8	10
20	Park	19	16	89	100
21	Laramie	36	19	20	22
22	Johnson	17	31	21	25

Table 5.--Summary of Canadian dove-call routes by Province

Includes all routes run in 1963 or 1964.

ALBERTA

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
6	Wheatland	5	--	2	--

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964

BRITISH COLUMBIA

2	Kamloops	--	16	--	48
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3	Okanagan	--	37	--	51
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MANITOBA

5	Charleswood- Richot	--	22	--	28
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6	Rosser	--	31	--	13
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ONTARIO

1	Simcoe	11	4	4	2
2	Kent	--	17	--	11
3	Bruce	--	4	--	0
4	Russell	2	0	4	0
5	Wellington- Grey	--	13	--	0
6	Simcoe	6	5	0	1
7	Dufferin	2	4	0	0
8	Lennox- Addington	30	5	5	3
9	Lambton	56	115	45	--
10	Russell- Carleton	3	6	1	0
11	Carleton	6	--	0	--
14	Oxford	--	1	--	2
15	Bruce	--	1	--	1
16	Perth	--	4	--	7
17	Essex S.	--	10	--	32
19	Haldimand	19	12	3	6
20	Norfolk	30	--	--	--
21	Haldimand- Norfolk	29	13	13	6

22	Prescott	--	1	--	0
23	Leeds	--	2	--	2
24	Prince Edward	6	15	7	0
25	York	5	3	2	1
26	Brant	--	17	--	17
27	Welland	3	12	11	5
30	Welland- Lincoln	27	9	33	11
31	Lincoln	21	--	3	--
33	Elgin	10	17	28	--
38	Lanark	--	14	--	0
39	Stormont	--	0	--	0
40	Grenville	--	5	--	11
42	Middlesex	15	19	10	9
43	York	26	20	23	12
44	Oxford	7	2	0	6
45	Durham	8	4	2	4
46	Frontenac	10	3	0	1
47	Simcoe	26	--	--	--
48	Peel	12	6	1	4
49	Brant	13	9	11	20

ONTARIO - Continued --

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
50	Hastings	5	3	1	1
51	Renfrew	4	3	1	6
52	Renfrew	0	--	2	--
53	Simcoe	7	3	5	3
54	York	1	--	7	--
55	Ontario	10	12	1	0
56	Ontario	5	13	3	11
57	Simcoe-				
	Grey	4	--	5	--
58	Hastings	--	17	--	19
59	Victoria	--	0	--	1
60	Northumberland--	--	7	--	9
61	Victoria-				
	Peterborough	--	0	--	0
62	Durham	--	3	--	0

Rt. No.	County	Heard		Seen	
		1963	1964	1963	1964
63	Victoria	--	3	--	0
64	Northumberland--	--	3	--	0
65	Durham	--	2	--	14
66	Victoria	--	2	--	0
67	Huron	--	4	--	9
68	Grey	--	23	--	3
69	Kent	--	15	--	5
70	Huron	--	5	--	7
71	Wentworth	--	11	--	9
72	Wellington	--	4	--	3
73	Bruce	--	15	--	0
74	Halton	--	7	--	2
75	Grey	--	5	--	1
76	Wellington	--	6	--	5
77	Leeds-Lanark	--	1	--	0

UNITED STATES
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